

Activity 5 Time Series

Activity focus

In this activity, students will throw/pass a football at a target and look at the accuracy of their throws over 3 separate trials. Each of the 3 trials should consist of 5 throws (making 15 throws in total). Each of the 3 trials represents a point in time, and students will use their 'time series' to assess whether their performance changed over time.

What you will need

- Footballs
- Targets
- Internet access is recommended
- Whiteboard/paper and coloured markers

Statistical concepts

Frequency, time series, prediction

Activity instructions

- Discuss whether students think their performance will get better or worse over time.
- Each person has 3 trials, each trial consists of 5 passes at a target. Record the accuracy of each of the 5 passes (i.e. hit or miss the target) for each trial.
- Calculate the number (**frequency**) of accurate passes in each trial.
- Graph the results (line graph).
- Look at the 3 points in time (the **time series**), and discuss whether performance got better, worse or stayed the same.
- Discuss other common time series (i.e. weather; unemployment, population) and why consistent time series data is useful.
- **Predict** what the 'expected outcome' might be for a 4th trial. Conduct the 4th trial and discuss results.

Another example of time series data is the Census of Population in Housing, in which we collect information every 5 years and compare changes over time.

Additional information

- For further information on time series data, see the ABS Statistical Language web pages:
<http://www.abs.gov.au/statlanguage>
- Definitions are provided in the Facilitator Guide and are also available on the ABS Statistical Language web pages.

